A Strategic Framework

2010–2015

Optimum Health & Quality of Life for Individuals with Multiple Chronic Conditions

U.S. Department of Health & Human Services
Interagency Workgroup on Multiple Chronic Conditions

May 2010 (draft)

Foreword

We are pleased to present a strategic framework for the U.S. Department of Health and Human Services (HHS) to improve the health status of individuals with concurrent multiple chronic conditions. This framework contains a vision statement, goals, objectives, and discrete strategies to guide the Department in coordinating its efforts internally and collaborating with stakeholders externally. We hope this framework and the ensuing discussions will begin to change the context of how chronic illnesses are addressed – from one focused on individual chronic diseases silos to one that utilizes a multiple chronic conditions approach. It is this culture change, or paradigm shift, and the subsequent implementation of these strategies that will provide a foundation for realizing *optimum health and quality of life for individuals with multiple chronic conditions.*

Background

Approximately 75 million Americans have multiple (2 or more) concurrent chronic conditions (MCC), including, for example, arthritis, chronic respiratory conditions, diabetes, heart disease, hypertension, and mental health conditions.[1] Chronic illnesses are "conditions that last a year or more and require ongoing medical attention and/or limit activities of daily living."[2,3] The prevalence of multiple chronic conditions in an individual increases with age, but the majority of Americans with MCC are under the age of 65 years. As the number of chronic conditions in an individual increases, the risks of the following outcomes also increase: mortality, poor functional status, unnecessary hospitalizations, adverse drug events, duplicative tests, and conflicting medical advice.[1,2,4,5,6] This picture is even more complex as some combinations of conditions, or clusters, have synergistic interactions, but not others.[5]

Sixty-six percent of total health care spending is directed toward care for the approximately 27% of Americans with MCC.[1] Increased spending on chronic diseases among Medicare beneficiaries is a key factor driving the overall growth in spending in the traditional Medicare program.[7] Individuals with MCC have faced substantial challenges related to the out-of-pocket costs of their care, including higher costs for prescription drugs and total out-of-pocket health care.[1]

Multiple chronic conditions can contribute to frailty and disability; conversely, most older persons who are frail or disabled have MCC. It is the confluence of MCC and functional limitations, especially the need for assistance with activities of daily living, that produce high levels of spending. Functional limitations can often complicate access to health care, interfere with self-management, and necessitate reliance on caregivers.[8]

---

[1] Anderson G. Chronic Care: Making the Case for Ongoing Care. Princeton, NJ: Robert Woods Johnson Foundation, 2010. Available at http://www.rwjf.org/files/research/50968chronic.care.chartbook.pdf. Last accessed May 11, 2010.

[2] Warshaw G. Introduction: advances and challenges in care of older people with chronic illness. *Generations*. 2006;30(3):5–10.

[3] Chronic conditions are inclusive of mental illnesses and substance abuse disorders.

[4] Lee TA, Shields AE, Vogeli C, Gibson TB, Woong-Sohn M, Marder WD, Blumenthal D, Weiss KB. Mortality rate in veterans with multiple chronic conditions. *J Gen Intern Med*. 2007;22(Suppl 3):403–407.

[5] Vogeli C, Shields AE, Lee TA, Gibson TB, Marder WD, Weiss KB, Blumenthal D. Multiple chronic conditions: prevalence, health consequences, and implications for quality, care management, and costs. *J Gen Intern Med*. 2007;22(Suppl 3):391–395.

[6] Wolff JL, Starfield B, Anderson G. Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Arch Intern Med*. 2002;162(20):2269–2276.

[7] Thorpe KE, Ogden LL, Galactionova K. Chronic conditions account for rise in Medicare spending from 1987 to 2006. Health Affairs. 2010;29(4):1-7.

[8] Alecxih L, Shen S, Chan I, Taylor D, Drabek J. Individuals Living in the Community with Chronic Conditions and Functional Limitations: A Closer Look. Office of the Assistant Secretary for Planning & Evaluation, U.S. Department of Health and Human Services. January 2010. Available at http://aspe.hhs.gov/daltcp/reports/2010/closerlook.htm Last accessed May 4, 2010.

The Institute of Medicine's 2001 report *Crossing the Quality Chasm: A New Health System for the 21st Century* highlighted the complexities of and the need for care coordination for individuals with multiple conditions.[9] Noting that there is evidence that patients actively receiving care for one chronic condition may not receive care for other, unrelated conditions, the IOM articulated that a challenge of designing care around specific conditions is to avoid defining patients solely by their disease or condition.[8,10] Data from the Medical Expenditure Panel Survey demonstrates the increasing prevalence of co-morbidities in those with chronic conditions. For example, over 90% of individuals with diabetes have another concurrent chronic condition.

Overall, the MCC population is characterized by tremendous clinical heterogeneity, with substantial variation in the number of chronic conditions, the severity of illness and functional limitations, and the clustering of conditions. Indeed, developing means for determining homogeneous sub-groups among this heterogeneous population is viewed as an important step in the effort to improve the health status of the total population and only recently is beginning to be addressed by researchers.[11]

The combined effects of increasing life expectancy and the aging of the population will dramatically increase the challenges of managing multiple chronic conditions among the burgeoning population of older persons. While there has been tacit appreciation of the quality of care and cost implications prompted by the increasing MCC population, the delivery of community health and health care services generally continues to be centered around individual chronic disease silos. In addition, the disproportionate impact of many chronic conditions on overall health care expenditures highlights the importance of using proven strategies for preventing the occurrence of additional chronic conditions.[7]

Role of the U.S. Department of Health and Human Services

The U.S. Department of Health and Human Services administers a large number of federal programs directed toward the prevention and management of chronic conditions, including, for example, financing health care services (Centers for Medicare & Medicaid Services); delivering care and services to persons with chronic conditions (Administration on Aging, Health Resources & Services Administration, and Indian Health Service); conducting basic, interventional, and systems research (Agency for Healthcare Research & Quality, National Institutes of Health); implementing programs to prevent and manage chronic disease (Centers for Disease Control and Prevention, and Substance Abuse and Mental Health Services Administration); and overseeing development of safe and effective drugs therapies (Food & Drug Administration).

[9] Committee on Quality of HealthCare in America, Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st century. Washington D.C.: National Academies Press; 2001.
[10] Redelmeier, Donald A., Siew H.Tan, and Gillian L.Booth. The treatment of unrelated disorders in patients with chronic medical diseases. *N EngI J Med* 338(21):1516–20, 1998
[11] Kronick RG, Bella M, Gilmer TP, Somers SA. The Faces of Medicaid II: Recognizing the Care Needs of People with Multiple Chronic Conditions. Center for Health Care Strategies, Inc., October 2007.

Because of the leading role HHS plays in health research, and payment for and delivery of health care services, it is incumbent upon HHS also to provide leadership in improving health outcomes in patients with MCC. Moreover, the increasing costs of, poor outcomes among, and complexity of managing those with MCC necessitate that HHS develop, implement, and coordinate programs and policies that improve the care to and health of patients. To achieve this goal, HHS will need to engage stakeholders in the implementation of effective strategies to address, improve, and better manage the health status of individuals with MCC.

The new health reform law – the Patient Protection and Affordable Care Act – provides HHS with new opportunities for addressing the prevention of chronic conditions, as well as enhancing the clinical management and improving the health status of individuals with MCC. This law will facilitate these advances through the development and testing of new approaches to coordinated care and management, patient-centered benefits, and quality measures. These advances may be further accelerated through the development of systematic approaches that link the law to principles and strategies for chronic disease prevention and management.

HHS Interagency Workgroup

To identify HHS options for improving the health of this heterogeneous population, the HHS Office of Public Health and Science (OPHS) has convened a departmental workgroup on individuals with multiple chronic conditions (http://www.hhs.gov/ophs/initiatives/mcc/workgroup_roster.html). Nearly all HHS operating divisions have participated in this workgroup. The workgroup's initial major effort was to produce a collation of existing HHS programs, activities, and initiatives focused on improving the health of individuals with MCC. This inventory (http://www.hhs.gov/ophs/initiatives/mcc/mcc_inventory.pdf), released in March 2009, contains over 50 current efforts across HHS directed primarily to the health care needs of people with two or more chronic health conditions. In addition, multiple interagency workgroup meetings have been held, including one with an academic external stakeholder panel and others on topics ranging from reducing re-hospitalizations in this population to reducing adverse drug events. The workgroup also has assisted the Department in both health reform and comparative effectiveness research efforts related to MCC. Many other efforts that focus on this population are currently underway across the Department. The workgroup believes that, among other beneficial effects, a strategic framework for the Department that provides a roadmap for improving the health status of persons with MCC will help to ensure a more coordinated and comprehensive approach to the implementation of the considerable work already directed toward this need.

HHS Vision and Strategic Framework on Multiple Chronic Conditions

The vision that drives the Department's efforts focused on this population is *Optimum Health & Quality of Life for Individuals with Multiple Chronic Conditions*. To achieve this vision, this framework establishes four overarching goals:

1. Provide better tools and information to health care and social service workers who deliver care to individuals with MCC
2. Maximize the use of proven self-care management and other services by individuals with MCC
3. Foster health care and public health system changes to improve the health of individuals with MCC
4. Facilitate research to fill knowledge gaps about individuals with MCC

Each of these goals includes several key objectives and strategies that the Department – in conjunction with stakeholders and those who have or care for those with multiple chronic conditions – should utilize to guide its efforts. These efforts should build on and potentiate current HHS programs and resources focused on the MCC population, many of which are identified in the 2009 MCC inventory. While this framework addresses those individuals with MCC, many of the strategies, including the prevention of additional chronic conditions, also apply to persons with only one chronic condition.

It should be emphasized that implementation of these activities is a shared responsibility by the public and private sector. HHS looks to build partnerships with all interested stakeholders to achieve these important goals for individuals with MCC.

Goal 1: Provide better tools and information to health care and social service workers who deliver care to individuals with MCC

Health care and social service professionals practice in a vacuum of published data regarding care for those with multiple chronic conditions. Providing these professionals with the tools and information they need to care for individuals with MCC is critical to improve care provision.

Objective A: Identify Best Practices and Tools – The MCC population is clinically heterogeneous. Irrespective of the specific combinations of chronic conditions, there likely are general approaches that facilitate improved, optimized care. The goal of identifying individual best practices is to promote a systematic approach to the assessment and management of this complex population.

Strategy 1.A.1. Identify, develop, and disseminate best practices information relevant to the general care of patients with MCC.[12]

Strategy 1.A.2. Develop key quality metrics, in the form of performance measures, to capture best practices in the general care of patients with MCC.

Strategy 1.A.3. Develop and validate materials that assist providers in educating patients with MCC in appropriate self-care.

Strategy 1.A.4. Develop and disseminate tools for use by and across different organizations and providers that improve the use and management of medications, including promotion of knowledgeable use of medications and reduction of patient risks associated with polypharmacy.

Strategy 1.A.5. Foster the use of health-promoting activities to achieve optimal health outcomes in individuals with MCC.

Objective B: Enhance Health Professionals Training – Health care and social service professionals are dependent on and influenced by training programs that prepare them for the environments in which they will practice. Evidence suggests that many health care professional trainees feel uncomfortable with key chronic

[12] Examples of care areas may include chronic pain, nutrition, physical activity, medication management, self-care management, and communication structures for inter-professional care coordination.

care competencies.[13] Addressing these gaps will ensure that the next generation of providers is proficient in caring for individuals with MCC.

Strategy 1.B.1. Identify and/or develop information relevant to the general care of patients with MCC for use in health and social service professional training programs.

Strategy 1.B.2. Disseminate information relevant to the general care of patients with MCC to all HHS-funded or supported health and social service professional training programs for inclusion in its required curricula, as appropriate.

Objective C: Address MCC in Guidelines – Evidence-based clinical guidelines assist health care providers in providing high quality care to patients. More often than not, guidelines on specific chronic conditions do not take into account the presence of MCC, and importantly, how these co-morbidities may affect the treatment plan.[14] As the evidence base grows to facilitate greater specificity in guidelines (see also Goal 4.C), guideline developers must be focused on using such evidence. Better incorporation of relevant information, however limited, will make guidelines more applicable to an increasing number of patients with MCC.

Strategy 1.C.1. Ensure that guidelines developers include information on the most common co-morbidities clustering with the incident chronic condition.

Strategy 1.C.2. Ensure that clearinghouses or repositories of chronic disease guidelines encourage labeling and promotion of selected guidelines that incorporate information on patients with MCC.

[13] Darer JD, Hwang W, Pham HH, Bass EB, Anderson G. More training needed in chronic care: a survey of US physicians. *Acad Med*. 2004;79(6):541–548.

[14] Boyd CM, Darer J, Boult C, Fried LP, Boult L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA*. 2005;294(6):716–724.

Goal 2: Maximize the use of proven self-care management and other services by individuals with MCC

Even the highest quality provision of care to individuals with MCC alone will not guarantee improved health outcomes for this population. Additionally, individual patients must be informed, motivated, and involved as partners in their own care.[15] Self-care management also can be important in managing risk factors that lead to the development of additional chronic conditions.

Objective A: Facilitate self-care management – Chronic disease self-care management programs have generated a significant evidence-base.[16,17] Translating and replicating these programs in multiple settings – including health care, home, work, assisted living, and other settings – will improve the health status of this population.

Strategy 2.A.1. Continually improve and bring to scale evidence-based, self-care management activities and programs.

Strategy 2.A.2. Enhance sustainability of evidence-based, self-management activities and programs.

Strategy 2.A.3. Improve the efficiency, quality, and costs of evidence-based, self-care management activities and programs.

Objective B: Facilitate in-home and community-based services – Evidence-based programs and services have been developed to assist the MCC population to live healthier and more independent lives. Examples of such programs are those which re-train Medicaid home health aides to provide appropriate home-based physical activity; and community-based programs that prevent falls and reduce the severity of depressive symptoms (both are common in those with MCC). The important role that families and caregivers provide in the management of chronic conditions also must be recognized and supported.

Strategy 2.B.1. Improve access to effective in-home and community services for the MCC population.

Strategy 2.B.2. Enhance sustainability of in-home and community services.

[15] Greenhalgh T. Chronic illness: beyond the expert patient. BMJ 2009;338:629-31.
[16] Selected publications at http://patienteducation.stanford.edu/bibliog.html.
[17] Selected publications at http://www.ahrq.gov/qual/ptmgmt/ptmgmtap1.htm

Objective C: Provide tools for medication management – As the number of chronic conditions increase, so do the number of medications prescribed and the degree of non-adherence to regimens.[18] Tools to improve knowledgeable use of medications may reduce chronic disease progression, in addition to reducing adverse drug events and medication errors.

Strategy 2.C.1. Develop and disseminate shared decision-making and other tools for individuals with MCC to provide accessible information about treatment choices and improve adherence to medication regimens.

Strategy 2.C.2. Develop and disseminate tools to help patients identify drug-drug interactions and potential adverse drug events from complex medication regimens.

[18] Tinetti ME, Bogardus ST, Agostini JV. Potential pitfalls of disease-specific guidelines for patients with multiple conditions. *New Eng J Med*. 2004;351(27):2870-74.

Goal 3: Foster health care and public health system changes to improve the health of individuals with MCC

While improving the health status of persons with MCC should involve heightened care coordination, achieving this goal for patients with up to a dozen providers and prescribers, and including coordination across acute- and long-term care systems, has been difficult. Unfortunately, the current model of fee-for-service medical care offers few financial incentives to provide care coordination. In addition, traditional disease management programs without a strong link to primary care and focused on singular or discrete conditions have not been optimally effective.[19,20] Changes to the delivery and provider payment system, development of accompanying quality and performance metrics, and increased involvement of the public health system can complement efforts to care for those with MCC.

Objective A: Improve care coordination through introduction of proven and potentially effective patient care management models – To address gaps in care coordination, several new models have emerged in recent years that emphasize interdisciplinary care, and provider communication and cooperation.[21] These models should target the population with MCC.

Strategy 3.A.1. Identify and conduct pilot implementation of new patient care models that target individuals with MCC broadly and/or MCC sub-groups with specific clusters of conditions.

Strategy 3.A.2. Expand pilot care models that demonstrate improved health outcomes and quality of life without increasing net costs or that maintain present health outcomes while decreasing net costs.

Objective B: Reduce re-hospitalizations of individuals with MCC – As the number of chronic conditions increases in an individual, so does the risk of re-hospitalization.[22] Provider and hospital incentives to reduce re-hospitalizations can improve the health status of this population.

Strategy 3.B.1. Identify and pilot models that reduce re-hospitalizations for individuals with MCC.

[19] Geyman JP. Disease Management: Panacea, Another False Hope, or Something in Between. *Ann Fam Med*. 2007;5(3):257-60.
[20] Peikes D, Chen A, Schore J, Brown R. Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries. JAMA. 2009;301(6):603-18.
[21] These models include, but are not limited to, patient centered medical-home (PCMH), community health teams (CHT), and accountable care organizations (ACO).
[22] Friedman B, Jiang HJ, Elixhauser A. Costly Hospital Readmissions and Complex Chronic Illness. *Inquiry*. 2008;45:408-21.

Strategy 3.B.2. Expand pilot care models that demonstrate reduced re-hospitalizations for individuals with MCC.

Objective C: Develop Provider Incentives – Health care professionals have few incentives to provide care coordination for individuals with MCC. Financial incentives would allow providers to spend the additional time needed to address the care complexities for this population.

Strategy 3.C.1. Work with stakeholders to identify and develop incentives that promote effective care coordination for providers who care for patients with MCC.

Strategy 3.C.2. Disseminate and implement the use of incentives that promote cost-effective care coordination for providers who care for patients with MCC.

Objective D: Utilize Health Information Technology – By facilitating coordinated care and providing uniform information to all providers caring for a patient with MCC, health information technology has great potential to help clinicians, health care delivery systems, families, and patients improve the quality and safety of individuals with MCC.

Strategy 3.D.1. Encourage the use of electronic health records (EHRs), personal health records (PHRs), and clinical registries to improve care for patients with MCC.

Strategy 3.D.2. Test and consider the use of secure messaging and additional health information exchange platforms such as telemedicine, to improve the care for patients with MCC.

Objective E. Promote efforts to prevent the occurrence of additional chronic conditions in persons with MCC – In addition to addressing health outcomes in persons with MCC, opportunities should be identified and fully used for preventing the occurrence of additional chronic conditions in persons with one or more such conditions.

Strategy 3.E.1. Develop approaches that increase providers' effectiveness in the primary prevention of new chronic conditions among persons with MCC, including conditions potentially arising from interactions between existing chronic conditions or therapies for those conditions.

Strategy 3.E.2. Develop models for use in the health and public health systems for preventing new chronic conditions among persons with MCC.

Goal 4: Facilitate research to fill knowledge gaps about individuals with MCC

Significant gaps exist in the approach to care for individuals with MCC. Bolstering research efforts will support health care providers and individuals in coordinating and managing care for this population.

Objective A: Increase the external validity of trials – As the number of individuals with MCC continues to grow, it will be important to ensure that treatment interventions (e.g., drugs and devices) for these conditions are safe and effective. To achieve this end, efforts to improve understanding of interactions between co-morbidities and to limit exclusions of this increasingly large population in clinical trials may assist in preventing adverse events and poor outcomes that otherwise might have occurred if this population were not included in the study design.

Strategy 4.A.1. Develop methods to assess the inclusion of patients with MCC in clinical trials. Such methods should include determining: 1) optimal trial designs for inclusion of MCC patients; 2) optimal approaches for recruiting MCC patients; 3) the potential risks of exposing some MCC patients to new interventions; and 4) the appropriate analysis of outcomes data from clinical trials that include patients with MCC.

Strategy 4.A.2. Improve the external validity of HHS-funded community and clinical intervention trials by ensuring that individuals with MCC are not unnecessarily excluded (as determined by experts in the funding institutes and centers, and grantee community).

Strategy 4.A.3. Ensure, through guidance or regulation, that individuals with MCC are not unnecessarily excluded from clinical trials for the approval of prospective drugs and devices, as applicable (as determined by appropriate subject matter experts).

Strategy 4.A.4. Assess and strengthen post-marketing surveillance for potential intervention-related adverse events and poor outcomes among individuals with MCC.

Objective B: Understand the epidemiology of MCC – Limited research has yielded information about the most prevalent sub-groups of individuals with MCC. Additional research identifying the most common patterns of MCC can help in targeting specific interventions for specific sub-groups.

Strategy 4.B.1. Stimulate targeted epidemiological research on the most common dyads and triads of MCC.

Strategy 4.B.2. Determine the distribution of MCC across the population, particularly for Medicare & Medicaid beneficiaries as well as clients of HRSA-funded community health centers and Indian Health Service hospitals and clinics, and use this information to plan interventions and monitor their effectiveness.

Objective C: Increase clinical and patient-centered health research - Little information is provided in clinical guidelines on chronic conditions regarding co-morbidities.[12] Research that elucidates the evidence-base for the prevention, management, and treatment of individuals with MCC is urgently needed.

Strategy 4.C.1. Expand research on the optimal approach for community-based health promotion, disease prevention, and healthcare management of individuals with MCC.

Strategy 4.C.2. Develop strategies to foster post market surveillance of new drugs and devices in MCC patient populations.

Objective D: Address disparities in MCC population – It is assumed that as racial and ethnic, gender, disability, sexual orientation, and geographic disparities of access to care and health outcomes exist in the total population, these disparities also exist in the MCC population. Additional research to test this assumption would assist in focusing efforts to intervene.

Strategy 4.D.1. Stimulate research to more clearly elucidate differences between and opportunities for intervention in MCC among various socio-demographic groups.

Strategy 4.D.2. Leverage current HHS disparities programs and initiatives to address the MCC population.

Future Direction

The aging of the population, the continued existence of chronic disease risk factors (e.g., tobacco use, poor nutrition, low physical activity levels), and the marvels of modern medicine will contribute to increasing numbers of Americans with multiple chronic conditions. The majority of individuals with chronic diseases in the United States now have multiple chronic conditions. Now is the time to view chronic disease prevention and care management through the prism of MCC.

This strategic framework will help HHS identify gaps in its current efforts to address the health status of individuals with MCC. The framework also will help HHS in developing initiatives to support the implementation of many of the stated strategies. The Interagency Workgroup on Multiple Chronic Conditions will continue assisting HHS in ensuring a coordinated and comprehensive effort for moving forward. Building partnerships with the public and private sector will be critical to achieving the vision of *Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions.*